



**STATE OF MONTANA  
MONTANA DEPARTMENT OF TRANSPORTATION  
JOB PROFILE**

☐

Update

☐

Formal Review

**Date Submitted** 1-23-2013

---

***SECTION I - Identification***

---

**Working Title:** Chemist

**Department:**  
Transportation

**Job Code Number:** 192316

**Division & Bureau:**  
Engineering Division  
Materials Bureau

**Job Code Title:** Chemist

**Section & Unit:**  
Testing Section  
Chemistry Unit

**Pay Band:** 6

**Work Address:**  
2701 Prospect Ave.  
Helena, MT 59601

**Position Number:** 40002, 40028

**Phone:** 406-444-6273

☐ FLSA Exempt ☒ FLSA Non-Exempt

☐ Non-Union ☒ MPEA ☐ Blue Collar

**Profile Completed By:**

John Buchanan  
Chief Chemist

**Work Phone:**

406-444-6273

**Work Unit Mission Statement or Functional Description:** The MDT's mission is to serve the public by providing a transportation system and services that emphasize quality, safety, cost effectiveness, economic vitality and sensitivity to the environment.

The Highways and Engineering Division prepares projects for bidding and coordinates highway construction. The Division is made up of the Materials, Construction, Right-of-Way, Bridge, Traffic and Safety, Environmental Services, Engineering Oversight, and Preconstruction bureaus; the CADD Systems and Engineering Management Support sections; and five District Construction Offices in Missoula, Butte, Great Falls, Glendive, and Billings for budget and workforce purposes.

The principal goals of the Materials Bureau of the Department of Transportation are to develop and implement comprehensive data collection, testing, and analysis programs that facilitate pavement project selection and pavement surface and subsurface design that addresses Montana's most important statewide transportation needs and to support the quality of materials incorporated into Montana's highway system. These activities help officials select projects and provide information for

short and long-range engineering and construction programs. These goals are addressed through the complex interaction and interrelationship of the Bureau's three Sections. The Bureau consists of the Geotechnical Section, Physical Testing Section, and Pavement Analysis Section.

The Chemistry Unit is responsible for the above duties involving chemical testing and analysis. Chemical analysis of a wide variety of materials used for road design, construction and maintenance is performed. The analyses are primarily used to evaluate the quality of materials and assure specification compliance.

---

**Describe the Job's Overall Purpose:** This position serves as a **Chemist** for the Chemistry Unit of the Physical Testing Section of the MDT Materials Bureau. The position is responsible for performing chemical and physical analysis of materials samples to determine the make-up of samples and their compliance with materials specifications; determining appropriate analytical methods for analyses, researching and developing new analytical procedures and quality control/assurance methods and techniques to implement state-of-the-art technology, verifying instrument performance, troubleshooting and validating generated data, prioritizing sample analyses, increasing the efficiency and reliability of analyses, and to ensure program compliance with agency business needs and applicable regulations and specifications; and administering laboratory operations including reporting, communications, and related activities. The position reports to the Chief Chemist (position #40007) and is responsible for lead worker supervision of Materials Lab Technician (position #94032).

---

<b>SECTION II - Major Duties or Responsibilities</b>	<b>% of Time</b>
<b>A. Analytical Chemistry</b>	<b>65%</b>
Perform chemical analysis of materials samples to determine the make-up of samples, their compliance with materials specifications, and whether the materials are performing appropriately.	
<ol style="list-style-type: none"> <li>1. Determine appropriate testing protocol and methodology to utilize, based upon project and referral source objectives, sample information, and condition, nature of materials to be tested, etc... Samples and testing objectives will vary, and each sample must be evaluated not only on the objective required (stated purpose of the test referral), but also on the compounds or elements involved, not only in the clinical makeup but in the chemical compatibility of what they are being used with. This requires an assessment of what chemical compounds are potentially present in the samples in order to ascertain the potential masking effects of one chemical to another. This analysis will also require consideration of low and high limits of the elements involved and related protocols based upon materials specifications, documentation, and contract requirements. <i>An example</i> of this is the qualitative and quantitative chemical analysis assignments involving many different chemical matrices (which can give different results) and instrumentation. Work involves chemistry and physics principles and practices and this position must interpret and assess results of analysis; nature of various matrices may have interferences from elements that can mask or artificially enhance results; in addition instrumentation such as AA- flame, furnace, hydride generation, ICP and GC.</li> <li>2. Prepare samples for testing through any or all of the following: isolating, concentrating, and reducing sample components; eliminating compounds or chemical constituents that can mask or skew results; protecting samples from cross-contamination; and conducting dilution, digestion, and burning of materials using heat, acids or bases. The required or necessary preparation will require demonstrated knowledge and expertise in the application of scientific methods and analytical procedures. <i>For example:</i> With ICP</li> </ol>	

and AA analysis, the lower the residue (trace analysis – ppm/ppb/ppt level) to be detected, the greater the interferences from other compounds that mask or enhance elements to give false or unclear results. Variables in such analysis involve not only decisions in extracting, digesting and concentrating samples based on a wide variety of matrix types, but also include the use chemistry and physics principles. An asphalt sample may contain tens of thousands of compounds which must be removed while at the same time keeping the phosphorus compounds of interest for further analysis. . This position will screen for multiple elements which involves selecting the appropriate method to ensure that elements are “not lost “in the sample solution being tested or using multiple instruments to confirm the presence of an analyte. Further variables involve the concentration of the sample, where decisions in the appropriate concentration are critical for successful instrumental analysis.

3. Ensure sample integrity to prevent cross-contamination, degradation, or mix-ups by applying standardized laboratory management procedures and sampling protocols. Specific measures required are determined on the basis of testing procedures being utilized, materials being tested, and established QA/QC protocols. *For example:* Interpretation of the data because of the inherent interference of masking or enhancing substances from the sample that are difficult to completely eliminate. Interpretation of data may be further complicated by possible contamination or instrument calibration problems that result in unclear results. Developing a solution or approach to identifying a particular element often involves adapting, modifying or creating an analytical method to produce a valid result. Such adapting or modifying involves modeling or testing the new application for soundness of approach, how rigorous the methods is, how accurate, reliable and reproducible the method results are.
4. Calibrate and validate computerized analytical instrumentation to evaluate and document appropriate instrument performance by testing reference analytical standards and comparing results to standards to verify instrument performance (For each string of samples: setup instrument; check out response, if not acceptable, investigate and make necessary corrections until the instrument is running appropriately. Then proceed to run the samples). This requires demonstrated knowledge and expertise with laboratory instruments and testing devices and the ability to evaluate instrument variances, and identify necessary correcting actions.
5. After processing samples through instrumentation, analyze results to identify the presence or absence of compound(s) by interpreting data using knowledge of a wide variety of compounds. Identify and quantify components in a variety of materials (cement, fertilizer, hydrated lime, paint, deicer, mulch, dyed diesel, engine oil, asphalt, emulsified asphalt, and water samples), using Gas Chromatograph, Inductively Coupled Plasma, Atomic Absorption spectrometer, and other instruments. The analysis process is to detect or determine a wide variety of compounds. The process requires running samples, and analyzing data from a variety of instruments to determine what may be correct, valid, and defensible. Depending on results further investigation and corrective action may be required. *For example:* Variables in instrumental analysis involve an extensive array of instruments, conditions, modifiers: variable wavelengths, slit widths, flame characteristics and position, addition of modifiers, types of data collection, and instrument choice – furnace, flame (oxygen or Nitrous oxide), hydride, cold vapor or ICP. Routinely choosing the correct wavelength for the desired sensitivity, using the appropriate flame type to

reduce interferences, adding appropriate modifiers to suppress, stabilize or enhance the response, adjusting the flame to enhance the response and minimize the interferences. These differ from test to test and element to element.

6. Conduct further analysis and evaluation of samples and testing protocols if identification is not clear. Determine the best course of action which may involve or relate to any of the following: further isolating and concentrating the sample to reduce interfering compounds and enhance instrument detection; reviewing methods to determine problem areas; assessing the possibility of contamination at various steps of the process; reviewing calibration and/or proper operation of instrumentation; adapting or modifying the chosen method(s) of analysis; or choosing another method of analysis. This requires demonstrated knowledge and experience in the application of scientific methods and analytical procedures and thorough understanding of complex chemical interactions usually acquired through experience. *For example:* spiking a sample (a QA/QC method) with a known amount of material, running the complete analytical method on the spiked sample and determining the % recovery of the spiked material will indicate how well the method is at removing the analyte of interest from the sample matrix. Method adjustments or changes can be tried to see if the % recovery is affected. The optimum method for recovering the analyte from the matrix can be determined. These types of QA/QC methods are completed for all analyses.
  
7. Perform the analysis of non-routine investigation samples requiring unique or specialized handling, preparation, instrumentation, and interpretation, using chemistry procedures and instrumentation. This often includes developing new methods, modifying existing methods, using instruments in new/different ways or using QA samples (samples with known components and quantities) to verify results. *For example:* A typical question for chemistry could be. The lab has to figure out how much lime is in an asphalt sample. How do we successfully extract the lime, calcium oxide from the asphalt sample? What previous research has been tried? How successfully was it? What is the most appropriate instrument(s) for the determination? After reviewing any pertinent literature (there was none in this case) the position uses their experience, education and best guess approach to determine the solution. If appropriate, the position contacts other labs for assistance in preparing samples. Once a successfully method is determined, it is verified using one or more QA/QC methods. Too much lime or not enough lime in asphalt can produce low performing roads which will crumble or form potholes, costing the tax payers additional money to fix or replace. *Another example:* how can we check to see if distributors are adding 10 % ethanol to the gasoline they are selling? MDT pays out ~ \$250,000 to these distributors. By adding less than the 10 % ethanol, the distributors can increase their profits. After researching literature, two methods were found. Based upon experience and knowledge of chemistry methods, one method was chosen. It required the purchased of new equipment. The decision to purchase this equipment is still being considered.
  
8. Analyze all testing results not meeting specifications through evaluation, correction, and implementation of various solutions using knowledge of analytical laboratory procedures, advanced math (statistical analysis, calculus) and chemistry principles of organic, inorganic and biochemistry. This analysis is to determine the causation of sample failure as well as to evaluate if the testing method was valid, rigorous, and did not contribute to false results. *For example:* A new contractor for paint was chosen this year. One of the

critical components, titanium was found to be below the specifications in the contract. Penalties of ~ \$100,000 were levied against the company. They were claiming the concentration of titanium was correct. To further solidify MDT's position that the paint was low in titanium, a new method of analysis was developed that utilized ICP detection instead of the Jones column method. The new method was verified using QA/QC techniques and used to confirm that the original analysis was correct. The contractor increased the amount of titanium in their paint and the new paint samples tested within the specifications of the contract.

9. Analyze, compile, calculate, and summarize test results; compare final results to specifications; and establish appropriate test results documentation and accompanying records based upon testing procedures and results. This requires documentation of test results, methods, calculations, and analytical data by entering information into spreadsheets and/or the laboratory information management system and organizing complete file including documentation received with sample, chain of custody documentation, worksheets, calculations, and analytical reports. It also requires identification of trends, errors, omissions, etc. and determination of whether corrective action is necessary in sample handling, analytical methods, instrumentation, data handling or report generation. *For example:* In dyed diesel analysis, sample jackets contain all the information on the sample; when, where it was sampled, how it was transported, who handled it, when the lab received the sample, all the lab analysis paperwork (worksheets, instrument reports, calculations, final report, etc.). A defense attorney or referee lab should be able to look at the sample jacket and know exactly what happened to the sample, how it was analyzed, whether there were problems or not, etc. All the information in the jacket must be legally defensible and able to stand up in a court of law. Fines for positive samples range from \$1000 for first time offenders to jail time for third time offenders.
10. Maintain, repair, and troubleshoot laboratory analytical equipment and instruments to ensure safety, accurate results, proper operation, cost containment, and extended life. This involves coordinating electronic diagnosis of instrument failure with instrument vendors by communicating with service engineers, by applying knowledge of instrument function and performance, and electronic and diagnostic techniques; and by maintaining and repairing analytical equipment and instruments using knowledge of instrument operation and theory, electronics, diagnostic techniques, and troubleshooting skills. *For example:* all the equipment is used by both chemists in the lab because each sample result that doesn't meet specifications must be done by the other chemist as a way to confirm the results. Instruments must work properly to insure accurate, reliable and reproducible results are obtained every time they are used.
11. This position must be an expert in all analyses performed in the lab, including sample receiving, prioritizing analyses, instrumentation (ICP, AA, GC, UV/Vis, etc), multi-tasking, and analyzing and reporting sample results. This may require concurrent application of testing processes to multiple instruments when there is only one chemist in the lab. *For example:* This position tests samples, prioritizes samples, does multiple testing and works with the lab manager as they check (confirm) each others sample results.

12. Participate in the Concrete and Cement Reference Laboratory (CCRL) reference testing program by performing chemical analysis of samples. Acceptable results on the CCRL samples are also a requirement of accreditation of the entire DOT laboratory. This duty requires the ability to analyze and interpret results from CCRL testing to make the appropriate changes and adjustment in the laboratory to ensure both accuracy and precision in sample analysis. *For example:* five times a year CCRL (Concrete Cement Reference Laboratory) sends out a reference sample to more than 1000 labs. MDT tests the sample for the requested analytes and results are compared among the labs. Statistical analysis is performed on all the results. An acceptable standard deviation is determined and each lab is graded on its performance. Any lab following below a certain acceptable level is required to investigate and report why they did poorly. This may involve repeating the analysis, using a different, new or modified method, checking instrument performance, calculation errors, etc. Depending upon the results of the investigation, a new, different or modified method or procedure might be used for further analysis. Successful performance on these samples enables the lab to be accredited. This gives the lab (authority) to “fail” cement samples when the components don’t meet the specifications in MDT regulations. A monetary fine or deduct will then be levied against the cement manufacturer.

**B. Research and Development 20%**

Research and develop analytical and quality control/assurance methods and techniques to implement state-of-the-art technology, increase the efficiency and reliability of analyses, and to ensure program compliance with agency business needs and applicable regulations and specifications.

1. Perform method verification and evaluation, and develop new chemical analyses and/or new applications of existing instrumentation to solve difficult chemical analysis problems by reviewing literature, consulting with application specialists, and using knowledge of advanced analytical chemistry and state-of-the-art instrumental techniques.
2. Research and develop laboratory methods and procedures to provide effective analysis of new construction materials and chemical properties; ensure the scientific and legal integrity of methods and conclusions; and promote efficient and cost-effective operations and services. This involves research and analysis of new methods, recent discoveries, and new products; designing scientifically valid experiments to evaluate and refine methods and procedures; documenting effective methods and procedures; and providing recommendations to the Chief Chemist on new methods or procedures.
3. Perform special collaborative studies to validate and evaluate analytical methods applying scientific knowledge of QA/QC protocol, laboratory practices, statistical analysis and study requirements.
4. Recommend improved laboratory policies, procedures, and guidelines that comply with State and federal requirements and allow for flexibility in implementation and coordination with other bureaus, state and federal agencies, and professional standards. This requires assessment of new scientific advances, laboratory technologies, industry practices, state and federal regulations, and other factors to develop recommendations for operational, policy, and program issues.
5. Maintain the enforcement of the required laboratory Quality Control Program; develop protocols related to instrument calibration, statistical evaluation, Quality Control, check

samples and related activities; evaluate the laboratory Quality Control program as new State or Federal laws or regulations are enforced; recommend changes and improvements to the Chief Chemist; and implement these changes using knowledge of QA/QC protocol, program requirements, laboratory needs, and state and Federal laws or regulations.

6. Conduct research into industry standards, professional association requirements, and agency operational needs to assist in the search and implementation of an important accreditation process necessary for MDT testing chemical and biological components of drinking water.
7. Make recommendations to the Chief Chemist on the need for new equipment based on lab policy, instrument specifications and performance, and observations during operation and troubleshooting activities including responsibility for developing specifications and recommending budget justifications and requests.
8. Develop and maintain quality control, instrument, standard, and check sample lab books to record and evaluate data. This includes recommending appropriate changes in lab policy or procedures to the Chief Chemist; implement the changes using knowledge of record keeping, statistics, QA/QC and instrument performance; and recommending and implementing corrective actions for programs or procedures that don't meet QA/QC protocols.

**C. Operations & Communications**

**10%**

Administer laboratory operations including reporting, communications, recordkeeping, supplies, and related activities.

1. Evaluate laboratory needs related to report generation, data manipulation, information flow, information storage and record keeping using knowledge of computer theory, program language, lab policies, QA/QC, and Good Automated Laboratory practices. Participate, as assigned, in the development and implementation of a Laboratory Information Management System.
2. At any given stage of the testing process, may be required to communicate and discuss test results with other personnel. This involves the exchange of information regarding methods, conflicting test results, and technical testing methods and procedures. This often requires discussing complex results/chemical analysis information with lay people, and ensuring that they understand. Interpret and explain standards, specifications, and other requirements to materials lab staff, field and district staff, and contractors to ensure consistency and compliance, resolve discrepancies, and ensure that project requirements and objectives are met. Respond to project staff or contractor requests for clarification, recommend adjustments and alternatives to prevent or mitigate compliance deficiencies, and resolve problems while maintaining standards and specifications
3. Evaluate requests to determine laboratory supply, equipment, and staffing needs relative to on-going laboratory projects. Evaluate laboratory supplies, equipment and staffing needs to perform special laboratory projects; determine project cost and feasibility; recommend appropriate action to the Chief Chemist; and direct subordinates to perform

the project using knowledge of analytical chemistry, instrument performance, QA/QC protocol, laboratory capability, and equipment, supplies and personnel costs.

4. Report findings and statistical evaluation of proposed methods in writing based on analysis of samples in a step-by-step process to provide information and training material for other lab personnel, utilizing knowledge of technical writing skills. Write comprehensive project reports with the cooperation of other lab personnel to be utilized by other agencies and the public, using knowledge of technical writing skills, QA/QC, and statistics.
5. Report laboratory findings and technical information in the form of professional papers or verbal presentations for use in educational, technical and professional meetings using knowledge of technical writing skill and/or oral communication skills. Write technical papers related to Standard Operating Procedures in the laboratory utilizing knowledge of technical writing skills and laboratory practices.
6. Represent the laboratory at technical meetings as assigned to keep current on contemporary methods and policies and/or share ideas by applying scientific knowledge and communication skill.
7. Maintain contact and work with other state and private laboratories to coordinate analytical methods and techniques using knowledge of concerns and communication skills.
8. Provide technical assistance concerning Materials Bureau samples on the telephone or to walk-in customers, using knowledge of analytical chemistry, QA/QC, laboratory requirements and communication skills.
9. Provide expert testimony regarding analytical methods, findings, and materials at hearings and in court as assigned.
10. Maintain and keep records of instrument supplies and parts inventory using knowledge of instrument operation, use of supplies, and the life time of parts.
11. Develop and maintain a Chemical Hygiene Plan (CHP) which complies with OSHA requirements and the Montana Safety Culture Act. Develop and maintain safety programs such as fire exiting, spill containment, etc to supplement the CHP.

**D. Lead worker/Other 5%**

Provide lead worker mentoring and supervision of lab personnel as assigned to ensure testing activities are effectively performed by qualified personnel and to ensure compliance with applicable personnel regulations and collective bargaining agreements. Perform other duties as assigned.

1. Provide technical oversight, quality assurance reviews, and chemical assistance to Project Managers, field lab personnel and other materials lab personnel on specific testing projects to ensure the quality, efficiency, and cost-effectiveness of work as well as compliance with standards, specifications, and Department requirements. This includes maintaining laboratory quality control to tabulate analytical data generated by in-house quality control programs; Check Sample programs; and conducting statistical



analysis of data using knowledge of precision, standard deviation, and other statistical calculations for each procedure.

2. Assist in the review and revision of staff work plans, priorities, and procedures. Monitor progress, disseminate data, and coordinate projects through meetings and consultation.
3. Research and evaluate workflow processes, efficiencies, and problems to identify the most effective use of human and fiscal resources to meet section goals and project objectives. Present recommendations for improving section work flow and staff performance. Ensure unit staff has the supplies, materials, and equipment needed to carry out their work.
4. Assist in planning and assigning work according to individual job descriptions, needs, and abilities of individual staff. Interpret, monitor, and implement work plans, policies, and procedures. Review assigned work for compliance with quality, quantity, and other standards. Assist other project staff in solving complex aspects of work assignments.
5. On all projects assigned, or in the absence of the Chief Chemist, ensure staff compliance with safety protocols, testing methods, laboratory and instrumentation techniques and related requirements through on-the-job training, observing work in process, and correcting inappropriate work procedures.
6. Provide input and recommendations regarding the training needs of unit staff through analysis of program effectiveness, new methods and policies, and staff performance. Provide or coordinate formal and on-the-job training to ensure that current physical testing methods and equipment are properly applied by unit staff. Ensure consistency in the application of training opportunities for staff and that Unit personnel are properly monitored and trained.
7. Perform a variety of special studies, research and analysis activities, and other duties as assigned by the supervisors and bureau chief in support of the Department mission and Bureau objectives. This includes filling in for coworkers; exchanging information with contractors, agency staff, and the public; providing training, education, and professional and technical assistance; directing special projects; and attending ongoing education and training as directed.

---

***The following duties and/or specific tasks listed under section II above are considered "essential functions" because they require specialized expertise and skill and are the primary reasons the job exists (they must be performed by this position with or without accommodations):***

Duty A: **Analytical Chemistry**

Duty B: **Research and Development**

Duty C: **Operations and Communications**

***The following mental and physical demands are associated with these essential functions:***

### **PHYSICAL**

- Occasional independent lifting required (up to 75 lbs.) of equipment, material samples, etc.
- Remaining standing or seated for extended periods of time
- Manual manipulation of testing equipment
- Visual acuity required to observe and discern material and sample conditions
- Operating a personal computer
- Communicate in writing, in person, and over the phone

### **MENTAL**

- Ability to multi-task
- Demands for accuracy in all aspects of work
- Ability to meet inflexible deadlines
- Computing arithmetic operations
- Comparing data
- Compiling information
- Analyzing
- Coordinating
- Instructing

**Does this position supervise others?**

☐

**Yes**

☒

**No**

**Number directly supervised:**

**0 - Lead work only**

**Attach an Organizational Chart.**

---

### ***SECTION III - Minimum Qualifications - List minimum requirements for the first day of work.***

---

#### **Critical knowledge and skills required for this position:**

**KNOWLEDGE:** The work requires knowledge of the principles and practices of analytical, organic, and inorganic chemistry; principles of physics, calculus and statistics; typical construction and maintenance materials are deicers, dyed diesel, paint, wear engine oil, soils, water, cement, hydrated lime, mulch, fertilizers, asphalt, etc.; scientific writing methods; computerized analytical instrument methods and physical measurements; computerized analytical instrument electrical circuits, instrument design, computer function and programming, instrument maintenance procedures, appropriate manuals, and validation methods; and quality assurance and quality control methods and procedures of the analytical chemistry profession and the work unit. Requires experience with the chemical and physical behavior of compounds in various matrices and various analytical methods, ability to evaluate analytical data and statistical information, ability to interpret and professionally validate results, and skill in the operation of computerized analytical instrumentation.

**SKILLS:** Require demonstrated skill in applying this knowledge to a variety of analytical chemistry assignments, including difficult and complex assignments, ranging from quantitative trace analysis with computerized analytical instrumentation, to method validation, to method development. Ability to stay on the cutting edge as new methods, techniques, instruments are developed by searching scientific literature, talking with instrument companies and various colleagues in similar positions.

#### **Behaviors required to perform these duties:**

See MDT Core Behaviors

**Education:**

Check the one box indicating minimum education requirements for this position for a new employee the first day of work:

- |   |  |
|---|--|
| <input type="checkbox"/> No education required                | <input type="checkbox"/> Related AAS/2-years college/vocational training |
| <input type="checkbox"/> High school diploma or equivalent    | <input checked="" type="checkbox"/> Related Bachelor's Degree            |
| <input type="checkbox"/> 1-year related college/voc. training | <input type="checkbox"/> Related Master's degree                         |

**Please specify the acceptable fields of study:**

Acceptable: Bachelor of Science degree in Chemistry or a directly-related area such as Bio-chemistry, Chemical Engineering, etc. Chemistry and lab related course work must have been conducted inside a controlled lab environment at an accredited college or university.

**Other education, training, certification, or licensing required:** Requires a valid Montana Driver's License.

**Experience:**

Check the one box indicating minimum work-related experience requirements for this position for a new employee the first day of work:

- |   |   |
|---|---|
| <input type="checkbox"/> No prior experience required | <input checked="" type="checkbox"/> 3 years |
| <input type="checkbox"/> 1 year                       | <input type="checkbox"/> 4 years            |
| <input type="checkbox"/> 2 years                      | <input type="checkbox"/> 5 or more years    |

**Other specific experience (optional):** Three (3) years of work experience or equivalent internship in an analytical laboratory, including one year experience with computerized analytical instrumentation.

**Alternative Qualifications:**

This agency will accept alternative methods of obtaining necessary qualifications.

- ☒ Yes   ☐ No

**Alternative qualifications include:** Any request for alternative qualifications would have to be evaluated on a case-by-case basis.

---

***SECTION IV – Other Important Job Information***

---

- |  |  |
|--|--|
| <input type="checkbox"/> Fingerprint check | <input checked="" type="checkbox"/> Valid driver's license |
| <input type="checkbox"/> Background check  | <input type="checkbox"/> Other; Describe                   |

Other information: The predominant work is performed in a controlled lab environment involving exposure to testing equipment, caustic chemicals (lime, acids, mercury, and other chemicals), dust and fumes. The position works with hot materials and equipment (steel molds, ovens at 1100 degrees, hot plates, etc.), and solvents and chemical additives which require use of protective apparel such as lab coats, gloves, respirators, and eye protection. The position requires training in, and close observation of, safety practices and procedures.

---

**SECTION V – Signatures**

---

Signature indicates this statement is accurate and complete.

***Employee:***

Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Immediate Supervisor:***

Name: John Buchanan \_\_\_\_\_ Title: Chemistry Lab Supervisor \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Bureau Chief:***

Name: Matthew R. Strizich \_\_\_\_\_ Title: Materials Engineer \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Division/District Administrator:***

Name: Dwane Kailey \_\_\_\_\_ Title: Chief Engineer \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Department Designee:***

Brent Rabe/Designee                      Human Resources Administrator  
Human Resources Division

Signature: \_\_\_\_\_ Date: \_\_\_\_\_